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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,508	09/26/2003	Takeshi Aso	040302-0349	8634

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EXAMINER

MERCADO, JULIAN A

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 06/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/670,508	Applicant(s) ASO, TAKESHI	
	Examiner Julian Mercado	Art Unit 1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9-26-03</u> . | 6) <input type="checkbox"/> Other: ____. |

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DETAILED ACTION

Remarks

Claims 1-7 are pending.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on September 26, 2003 has been considered by the examiner.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 6 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 6, the word "means" is preceded by the word(s) "electric power converter" in an attempt to use a "means" clause to recite a claim element as a means for performing a specified function. However, since no function is specified by the word(s)

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preceding "means," it is impossible to determine the equivalents of the element, as required by 35 U.S.C. 112, sixth paragraph. See *Ex parte Klumb*, 159 USPQ 694 (Bd. App. 1967).

Claim 7 in line 9 and line 13 recites the limitation "controlling such that..." and the limitation "controlling such that the level of the electric power supplied to the load is detected...", however, it is unclear what specifically is being controlled. It appears to the examiner that the claim intends to recite controlling ---the fuel cell system-- in both instances.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5 and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Ding et al. (U.S. Pat. 6,580,977 B2.)

The method claim 7 is herein discussed first. To the extent that the claim is understood by the examiner, Ding et al. teaches a method of controlling a fuel cell system comprising converting a level of an electric power of a secondary battery to supply the electric power from the secondary battery to a load at a converted electric power level. In the instant case, the level of power from the battery [SOC_{b2}] may be increased up to 95% to assist the FCS (fuel cell system) during start-up. See col. 5 lines 29-42 and col. 6 lines 8-18. With respect to the claimed

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controlling of the fuel cell system such that, when starting up the fuel cell stack, a voltage level of the electric power to be supplied from the secondary battery to the load lies at a value equal to or greater than an open voltage level of the fuel cell stack, if the battery is supplying 95% of the electric power, the FCS resultantly supplies the 5% during start-up. Regarding the claimed controlling of the fuel cell system such that the level of the electric power supplied to the load is detected to permit the electric power to be supplied to the load from the secondary battery at an electric power level less than a detected electric power level, during normal operation the FCS operates without any supplemental assistance from the battery, thus, the battery is supplying at an electric power less than the detected power level (which is met in full by the FCS). See col. 7 line 18 et seq., emphasis in lines 30-34.

As to claims 1-5, drawn to the system claims, disclosed in Ding et al. is a fuel cell stack [44], diode [56], a secondary battery [54] by which an electric power is charged and discharged, an electric power converter [58] connected to the fuel cell stack through the diode to convert an electric power level, charged in the secondary battery, and supplying a converted electric power to the load. See Figure 3 and col. 5 line 8 et seq. It is noted that by the claimed electric power converter, which is recited, *inter alia*, to control the electric power converter in a way wherein, if an output electric current of the fuel cell stack, appearing when the electric power level supplied from the secondary battery to the load is decreased, is greater than a given value, reduction in the electric power level is interrupted, as Ding et al. specifically disclose that “[t]he inverter 58 should be associated with the FCS 44 and/or battery 54 to assure proper power and power distribution as required by control strategy of the present invention.” See col. 5 line 34-38.

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With respect to claims 2-5, it is noted that the limitations drawn to the manner in which the controller controls the electric power converter have not been given patentable weight, as such language is construed as a statement of intended use which do not further limit the system claims to a particular structure.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 6 is rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ding et al.

The teachings of Ding et al. are discussed above.

Claim 6 is noted to recite “electric power converter means connected to the fuel cell stack” and “control means operative to control the electric power converter means”. To the extent that the claimed electric power converter means is entitled to a 35 U.S.C. 112, sixth paragraph interpretation for the reasons discussed above, Ding et al. is asserted to control the electric power insofar as it assures proper power and power distribution as required for operation by way of the inverter [58]. (ib.) With respect to the control means, i.e. a means for controlling, Ding et al.’s teaching of a control “strategy” complete with warning signals, commands, logical modules, etc. and which is a combined FCS and battery strategy, is considered to teach this means or at least suggest this means as an art-recognized equivalent thereof, absent of a distinct

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identified structure as described in the specification corresponding to each claimed means-plus-function with reference to the specification by page and line number, and to the drawing, if any, by reference characters. See Ding et al. in col. 6 line up to col. 8 line 8.

Conclusion

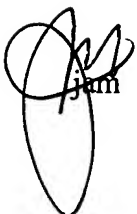
The cited prior art not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian Mercado whose telephone number is (571) 272-1289. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

A handwritten signature in black ink, appearing to be "J. Mercado", written over a circular stamp or mark.

PATRICK JOSEPH RYAN
SUPERVISORY PATENT EXAMINER